Air Force Research Laboratory|AFRL

*Science and Technology for Tomorrow's Air and Space Force*

# Success Story

## SoRDS: A PLATFORM FOR VOICE/VIDEO/ NETWORK RADIO


The demand for smarter communications led to software reconfigurable radios, and the need for more robust data led to new compression algorithms. Sending more data over the same communication link requires a more integrated communication system with data throughput, link parameters, and communications parameters, all tied together and controlled as a unified system.

The Information Directorate created the Software Radio Development System (SoRDS) to support test and evaluation of communications techniques dealing with voice, video, and networking applications. SoRDS' modular architecture consists of a signal processing system, adaptive computing system, and radio frequency (RF) transmit/receive system.

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## Accomplishment

The directorate's Information Grid Connectivity Branch teamed with PAR-Rome Research Corporation to design, develop, and implement a wireless test bed, incorporating reprogrammable software and reconfigurable hardware. SoRDS, recently used to establish a wireless video link, allows evaluation and comparison of various video compression techniques and algorithms.

SoRDS is a portable platform that enables rapid development and demonstration of wireless communication applications. The full SoRDS package includes the Beowulf cluster computer system (a multiprocessor, high-performance computer where each processor is connected by high-speed Ethernet), plus a network switch module, an input/output (I/O) chassis (including data and audio I/O and the RF module), and a host computer providing a graphical user interface and system control.

## Background

The future of US military communications is the software-based Joint Tactical Radio System (JTRS). The SoRDS test bed provides a means to design, develop, and test communication techniques in a flexible, state-of-the-art laboratory test bed before insertion into the JTRS.

SoRDS offers waveform designers the ability to develop techniques that may be too advanced or in need of advanced components that are not available in present JTRS-capable systems. Waveforms in the queue for implementation on SoRDS include high-data rate waveforms, wideband waveforms, low probability of intercept/low probability of detection/antijam waveforms, and other advanced communication techniques.

Information
Technology Transfer

## Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-IF-06)